CONSERVATION STATUS OF CHRYSOTHAMNUS PARRYI SSP. MONTANUS ON BEAVERHEAD NATIONAL FOREST, MONTANA

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I. SPECIES INFORMATION

A. CLASSIFICATION

1. SCIENTIFIC NAME: Chrysothamnus parryi (Gray) Greene ssp. montanus L. Anderson

2. SYNONYMS: Chrysothamnus parryi var. b (Hitchcock & Cronquist 1973)

3. COMMON NAME: Centennial rabbitbrush

4. BIBLIOGRAPHIC CITATION: Anderson, L. C. 1978. New taxa in Chrysothamnus, section Nauseosi (Asteraceae). Phytologia 38: 319.

5. TYPE SPECIMENS: United State, Idaho, Clark Co., exposed rocky slopes of Red Conglomerate Peaks, Irving Creek drainage, 28 air miles northwest of Dubois, 14 September 1957, L. C. Anderson 1024 (FSU!, KSC!, MSC!, UC-holotype).

6. FAMILY: Asteraceae (Sunflower Family)

7. GENUS: Chrysothamnus contains five sections, 16 species and 41 subspecies confined to western North America (Anderson 1986).

8. SPECIES: Chrysothamnus parryi ssp. montanus was first discovered by Arthur Cronquist near Red Conglomerate Peaks in Clark County, Idaho in 1939. Cronquist referred to this taxon in Vascular Plants of the Pacific Northwest (Hitchcock et al. 1955) and in Flora of the Pacific Northwest (Hitchcock and Cronquist 1973) but proposed no formal nomenclature. The plant was considered most closely related to ssp. parryi or ssp. howardii. Loren Anderson now considers ssp. montanus most closely related to ssp. howardii (Anderson 1978).

B. PRESENT LEGAL OR FORMAL STATUS

1. FEDERAL STATUS

a. U.S. Fish and Wildlife Service: C-2; Chrysothamnus parryi ssp. montanus is a candidate for listing as an endangered or threatened species, but currently there is not enough information to make a decission on listing (USDI-FWS 1990)

b. U.S. Forest Sercvice: Chrysothamnus parryi ssp. montanus is listed as Sensitive in the Northern Region (Region 1) and the Intermountain Region (Region 4). This is a subspecies for which the regional forester has determined there is a concern for population viability within a state, as evidenced by significant current or predicted downward trend in populations or habitat (Lesica and Shelly 1991).

2. STATE STATUS: Chrysothamnus parryi ssp. montanus is currently listed by the Montana Natural Heritage Program as Critically imperiled globally and in Montana because of extreme rarity (G5T1/S1). Lesica and Shelly (1991) consider the subspecies sensitive because it is known from a very limited number of occurrences. These state listings do not provide any direct legal protection.

C. DESCRIPTION

1. GENERAL NONTECHNICAL DESCRIPTION: Cenetnnial rabbitbrush is a low-growing, highly branched shrub with stems that have a thick, felt-like covering of white hairs. Close inspection may be necessary to detect that the white color of the stem is produced by matted hairs. The linear leaves are 2/3-1 1/2 inches long and ca. 1/10 inch wide. They are moderately sticky with a varnish-like coating. The inflorescence has one or a few heads and is overtopped by the uppermost stem leaves. Each head is ca. 1/2 inch long and usually has 8-10 yellow disk flowers but no ray flowers. The bracts forming the base of each head are lance-shaped with hairs spaced along the margins and long pointed green tips. They overlay each other like shingles on a roof. The seeds have numerous long, thin, stiff hairs at the top. Illustrations are provided in Appendix A. Photographs are provided in Appendix B.

2. TECHNICAL DESCRIPTION: Intricately branched, low, spreading shrubs, 1-2(3) dm tall; leaves green, alternate, entire, linear, 2-3.5 cm long, 1-2 mm wide, viscidulous, upper ones surpassing the few-headed cymose inflorescence; heads 10-11.5 mm long, involucral bracts (11)13-17(18), viscidulous, more or less in verticle rows, outer bracts lanceolate-ovate with ciliate margins and long acuminate, herbaceous tips; disk flowers

(4)5-11(12), yellow, corollas 9-10 mm long, lobes 1.4-1.7 mm long, broadly lanceolate, styles variable with stigmatic lines much shorter to slightly longer than the style appendages; achenes 8 mm long, pubescent; pappus of numerous capillary bristles; n=9 (Anderson 1978).

3. SIMILAR SPECIES AND FIELD CHARACTERS: Chrysothamnus parryi ssp. montanus is a low shrub with white stems, linear, glabrous leaves and involucral bracts alligned in vertical ranks. This combination of morphological characters combined with its high-elevation habitat distinguishes it from other similar species. Chrysothamnus viscidiflorus and C. nauseosus generally occur at lower elevations but may be sympatric with C. parryi ssp. montanus. The former has wider leaves and the twigs are not white. The latter has white stems and narrow leaves, but the leaves are also white-hairy, and the inflorescence is borne well above the uppermost leaves. Haplopappus suffruticosus is common in rocky subalpine habitats, but its stems are not white, and the leaves are wider. Furthermore, it has heads with ray flowers. The most similar species to C. parryi ssp. montanus is Haplopappus macronema ssp. linearis, another rare plant in Montana. Both are low shrubs with narrows leaves and white stems. The flowers are very similar too, but H. macronema ssp. linearis has glandular hairs on the leaves and involucres and does not have involucral bracts that are overlapped like shingles in vertical rows. In addition, it usually occurs in the montane or valley zones.

D. GEOGRAPHIC DISTRIBUTION

1. RANGE: Chrysothamnus parryi ssp. montanus is known only from the the Red Conglomerate Peaks area of the Beaverhead Range (this area is considered part of the Centennial Range by Mancuso and Moseley 1990) in Clark County, Idaho and adjacent Beaverhead County, Montana (Anderson 1978, 1986; Mancuso and Moseley 1990; see Appendix C). The range of C. parryi as a whole is Nebraska west to Montana, Idaho, Nevada and California, south to Arizona and New Mexico.

2. RECENTLY VERIFIED SITES: Mancuso and Moseley (1990) report four populations of Chrysothamnus parryi ssp. montanus in Clark County, Idaho: Red

Conglomerate Peaks, Peak 9996, Knob Mountain, and The Thumb. Thorough searching in Montana in 1992 extended the extent of The Thumb population (Appendix D). Thus, there are four known populations in the world, part of one of these is in Montana (Appendix C). The Montana population occurs on on the Dillon District of Beaverhead National Forest.

3. HISTORICAL SITES: The first collection from the Red Conglomerate Peaks area was made by Arthur Cronquist in 1939. The site was recollected in 1957 by Loren Anderson (Anderson 1978). It is presumed that these sites are the same as those mapped by Mancuso and Moseley (1990).

4. UNSUCCESSFULLY SEARCHED AREAS: Mancuso and Moseley (1990) searched the southern Beaverhead Range in Idaho from the head of Warm Creek east along the Continental Divide to Monida Pass and in the Centennial Range in the Taylor Mountain and Sawtell Peak areas. In 1992 I searched in the southern Beaverhead Range in Montana along the Continental Divide from the head of Little Beaver Creek west to the head of Sawmill Creek. I also searched the southern slopes of the Lima Peaks (Appendix C). In addition, I searched the Sphinx Mountain area in the Madison Range because the parent material and elevations are identical to that found in the Red Conglomerate Peaks area. Recent vegetation studies in southwest Montana and adjacent Idaho have failed to locate additional populations (Brunsfeld 1983, Moseley 1985, Cooper and Lesica 1992).

E. HABITAT

1. ASSOCIATED VEGETATION: Chrysothamnus parryi ssp. montanus occurs on sparsely vegetated sites (Mancuso and Moseley 1990). At the Montana site total shrub, graminoid and forb cover were estimated to be 1%, 10% and 10% respectively. Dominant species were Poa interior, Leucopoa kingii, Erigeron caespitosus and Antennaria umbrinella. Other common species include Artemisia frigida, Haplopappus acaulis, Draba oligosperma, and Oxytropis campestris. Species diversity was relatively high, but total cover was low (see Appendix E for ECODATA plot data).

2. TOPOGRAPHY: Chrysothamnus parryi ssp. montanus occurs on slopes or windswept ridge crests with

southerly exposure between 8,800 and 10,000 ft (Mancuso and Moseley 1990). Most of the Montana portion of the Red Conglomerate Peaks area consists of north-facing slopes; thus, there is little available habitat in the state. The one Montana site is at 9,300 ft on a 50% slope with a 170° aspect.

3. SOIL RELATIONSHIPS: Chrysothamnus parryi ssp. montanus occurs on stony, poorly developed soils derived from calcareous parent material of the Beaverhead Conglomerate formation (Mancuso and Moseley 1990). This is true of the Montana site as well as the Idaho sites.

   Beaverhead Conglomerate is the lithified bed of a large ancient river (James Sears, University of Montana Department of Geology, pers. comm). In Montana this formation occurs around Monida Pass and along the Red Rock River in southern Beaverhead County. The only high-elevation outcrops occur around Red Conglomerate Peaks. A nearly identical formation, the Sphinx Conglomerate, occurs around Sphinx Mountain in the central Madison Range southeast of Ennis. It outcrops at 9,000 ft to well above timberline.

4. REGIONAL CLIMATE: The climate of southern Beaverhead County is semi-arid. The closest Montana recording station to the Red Conglomerate Peaks is at Lima ca. 20 miles north at an elevation of 6,275 ft. There, mean July maximum and January minimum for 1950-1980 were 81.6 and 5.3°F respectively, and mean annual precipitation was 10.74 inches (NOAA 1982). Temperatures at 9,500 ft. are expected to be ca. 10° F cooler than at Lima. The Soil Conservation Service estimates mean annual precipitation in the Red Conglomerate Peaks area to be 30 inches based on snow course records (USDA-SCS 1981).

F. POPULATION BIOLOGY

1. PHENOLOGY: Chrysothamnus parryi spp. montanus was observed flowering on August 21 in 1990 (Mancuso and Moseley 1990) and on August 15 in 1992. It probably flowers throughout much of August and early September.

2. POPULATION SIZE AND CONDITION: The Montana portion of The Thumb population is estimated to be ca. 200

plants. The Idaho portion of this population contains ca. 300 plants (Mancuso and Moseley 1990). The other Idaho populations are estimated at ca. 3,100 plants. Thus, the total number of plants globally is estimated to be ca. 3,600.

The Montana portion of The Thumb population appeared to be vigorous with plants ranging in size from very small to quite large. Most of the larger plants were flowering. Idaho populations also appear healthy (Mancuso and Moseley 1990).

3. REPRODUCTIVE BIOLOGY

a. TYPE OF REPRODUCTION: Reproduction appears to be entirely by seed. I did not observe any layering or other forms of vegetative reproduction.

b. POLLINATION BIOLOGY: The pollinators of Chrysothamnus parryi ssp. montanus are not known. The very similar flowers of Haplopappus macronema ssp. linearis are visited by small butterflies at lower elevations (Lesica, observations). The windy, exposed habitat of C. parryi ssp. montanus makes it likely that strong-flying pollinators such as bees may be important.

c. SEED DISPERSAL AND BIOLOGY: The achenes of Chrysothamnus parryi ssp. montanus have numerous capillary bristles and are undoubtedly shed in late fall or early winter. The habitat is very windy, so dispersal is most likely by wind. Large animals such as bighorn sheep and mountain goats may also play a role.

d. SEEDLING BIOLOGY: Chrysothamnus parryi ssp. montanus generally occurs in windswept sites on warm, dry exposures (Mancuso and Moseley 1990). Evapotranspiration is high and, in most years, snow cover would be minimal. Seedlings would likely have to depend on spring snow or rain to become established. Thus, recruitment may be limited to years with reliable spring precipitation.

G. ECOLOGY

1. BIOLOGICAL INTERACTIONS

a. COMPETITION: Chrysothamnus parryi ssp. montanus occurs in very sparsely vegetated sites, suggesting that abiotic interactions may be more important than competition in regulating recruitment and survival. However, these habitats may also be very dry, at least during some parts of the year. At these times competition for water may be important.

b. HERBIVORY: I observed no immediate evidence of grazing on plants of Chrysothamnus parryi ssp. montanus. The dense branching pattern could be caused by wind abrasion, but it could also be caused by grazing. Mountain goats and bighorn sheep do occur in the area, and high windswept areas are often used by these species. The palatability of centennial rabbitbrush is not known. Rubber rabbitbrush (C. nauseosus) is preferred by antelope, and predation by this and other species may regulate abundance in some circumstances (Yoakum 1986). The effects of grazing on C. parryi ssp. montanus should be assessed.

Many species of insects feed on more common types of rabbitbrush (Dalen et al. 1986, McArthur 1986, Stafford and Johnson 1986); however, I observed no evidence of insect herbivory on Chrysothamnus parryi ssp. montanus.

Specimens of C. parryi ssp. montanus from Montana have fungal infections on some leaves. These include brown senescent leaves as well as apparently vigorous green leaves.

2. HYBRIDIZATION: Chrysothamnus nauseosus and C. viscidiflorus occur in the same area as C. parryi ssp. montanus, but I did not observe any evidence of hybridization.

H. LAND OWNERSHIP

1. U.S. FOREST SERVICE: All populations of Chrysothamnus parryi ssp. montanus occur on public land administeres by the U.S. Forest Service. The Montana population occurs on the Dillon District of Beaverhead National Forest. The Idao populations occur on the Dubois District of Targhee National Forest.

II. ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

A. THREATS TO KNOWN POPULATIONS: There are no apparent threats to populations of Chrysothamnus parryi ssp. montanus at this time. Although livestock are grazed on the slopes of the Red Conglomerate Peaks area, I observed no evidence that they get as high as the habitat of C. parryi ssp. montanus. There are no roads that penetrate to the high subalpine ridges, and off-road vehicle use in the area seems unlikely. Although the area may be used by hunters in the fall, there are few maintained or mapped trails, so heavy use is unlikely. USGS topographic maps show no mining activity in the area.

Bighorn sheep, mountain goats and mule deer do occur in the area. These native species have apparently coexisted with populations of Chrysothamnus parryi ssp. montanus. However, as the density of livestock, recreationists and hunters increase at lower elevations, native wildlife are forced to use high-elevation habitat more heavily, and, if populations of native species are high, overgrazing could become a problem. Although the palatability of this rare subspecies is unknown, other species of Chrysothamnus are palatable to antelope (Yoakum 1986) and perhaps other species of native wildlife. Overgrazing by native wildlife is a potential threat to C. parryi ssp. montanus.

B. MANAGEMENT PRACTICES AND RESPONSE: There is no information on the response of Chrysothamnus parryi ssp. montanus to disturbances of any kind. Chrysothamnus nauseosus is thought to respond positively to disturbance (Stevens 1986). Since C. parryi ssp. montanus occurs in relatively barren habitats, it may respond positively to moderate levels of disturbance.

C. RECOMMENDATIONS FOR MAINTAINING VIABLE POPULATIONS: Although there are no immediate threats to maintaining the existing populations of Chrysothamnus parryi ssp. montanus, it is very rare and localized. All management plans for the Red Conglomerate Peaks area should consider possible effects on this plant. Wildlife numbers in the area should be monitored, as any large increases could have an adverse effect. The Forest Service should consider establishing a long-term monitoring study to determine trend. Finally, Chrysothamnus parryi ssp. montanus should be maintained on the sensitive list by Region 1 of the U.S. Forest Service.

D. SUMMARY: Chrysothamnus parryi ssp. montanus is a local endemic with four populations comprised of ca. 3,600 individuals confined to less than 2,000 acres in the Red Conglomerate Peaks area along the Continental Divide in Clark County, Idaho and Beaverhead County, Montana. The plant occurs in poorly developed, stony soil derived from Beaverhead Conglomerate, and is found in sparsely vegetated communities on slopes and ridges with southerly exposures near or above timberline. All known populations are on public land administered by the U.S. Forest Service, the Dubois District of Targhee N.F. and the Dillon District of Beaverhead N.F. The habitat is remote, and there are no apparent threats at this time. However, the small population sizes and local distribution make the species vulnerable to any disturbances in the area. The plant should be given consideration in all management decisions related to the Red Conglomerate Peaks area, and the condition of populations should be monitored.

Chrysothamnus parryi ssp. montanus is currently listed as C-2 by the U.S. Fish and Wildlife Service and sensitive by Region 1 and Region 4 of the U.S. Forest Service. Results of surveys in Idaho and Montana indicate that its status should not be changed.

III. LITERATURE CITED

Anderson, L. C. 1978. New taxa in Chrysothamnus, section Nauseosi (Asteraceae). Phytologia 38: 309-320.

Anderson, L. C. 1982. An overview of the genus Chrysothamnus (Asteraceae). Pages 29-45 in E. D. McArthur and B. L. Welch (eds.), Proceedings - symposium on the biology of Artemisia and Chrysothamnus. USDA Forest Service General Technical Report INT-200, Ogden, UT.

Brunsfeld, S. J. 1983. Alpine flora of east-central Idaho. M.S. Thesis, University of Idaho, Moscow.

Cooper, S. V. and P. Lesica. 1992. Plant community classification for alpine vegetation on Beaverhead National Forest, Montana. Report prepared for Beaverhead National Forest, Dillon, MT

Dalen, R. S., R. A. Fletcher and F. A. Winter. 1986. Rabbitbrush (Chysothamnus nauseosis ssp. consimilis) mortality associated with defoliation by a leaf-feeding beetle, Trirhabda nitidicolis. Pages 199-204 in E. D. McArthur and B. L. Welch (eds.), Proceedings - symposium on the biology of Artemisia and Chrysothamnus. USDA Forest Service General Technical Report INT-200, Ogden, UT.

Hitchcock, C. L. and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press, Seattle, WA.

Hitchcock, C. L., A. Cronquist, M. Owenby and J. W. Thompson. 1955. Vascular plants of the Pacific Northwest, Part 5: Compositae. University of Washington Press, Seattle, WA.

Lesica, P. and J. S. Shelly. 1991. Sensitive, threatened and endangered vascular plants of Montana. Montana Natural Heritage Program, Occasional Publication No. 1 Helena, Montana.

Mancuso, M. and R. K. Moseley. 1990. Field investigation of Chrysothamnus parryi ssp. montanus, a Region 4 sensitive species on the Targhee National Forest. Idaho Department of Fish and Game, Boise.

McArthur, E. D. 1986. Specificity of galls on Chrysothamnus nauseosus subspecies. Pages 205-210 in E. D. McArthur and B. L. Welch (eds.), Proceedings - symposium on the biology of Artemisia and Chrysothamnus. USDA Forest Service General Technical Report INT-200, Ogden, UT.

Moseley, R. K. 1985. Synecological relationships of alpine spike-fescue grasslands in east-central Idaho. M.S. Thesis, University of Idaho, Moscow.

National Oceanic and Atmospheric Association. 1982. Monthly normals of temperature, precipitation and heating and cooling degree days. Montana, 1951-1980. National Climate Center, Ashville, North Carolina.

Stafford, M. P. and J. B. Johnson. 1986. Phytophagous insects of green rabbitbrush in southeastern Idaho. Pages 211-214 in E. D. McArthur and B. L. Welch (eds.), Proceedings - symposium on the biology of Artemisia and Chrysothamnus. USDA Forest Service General Technical Report INT-200, Ogden, UT.

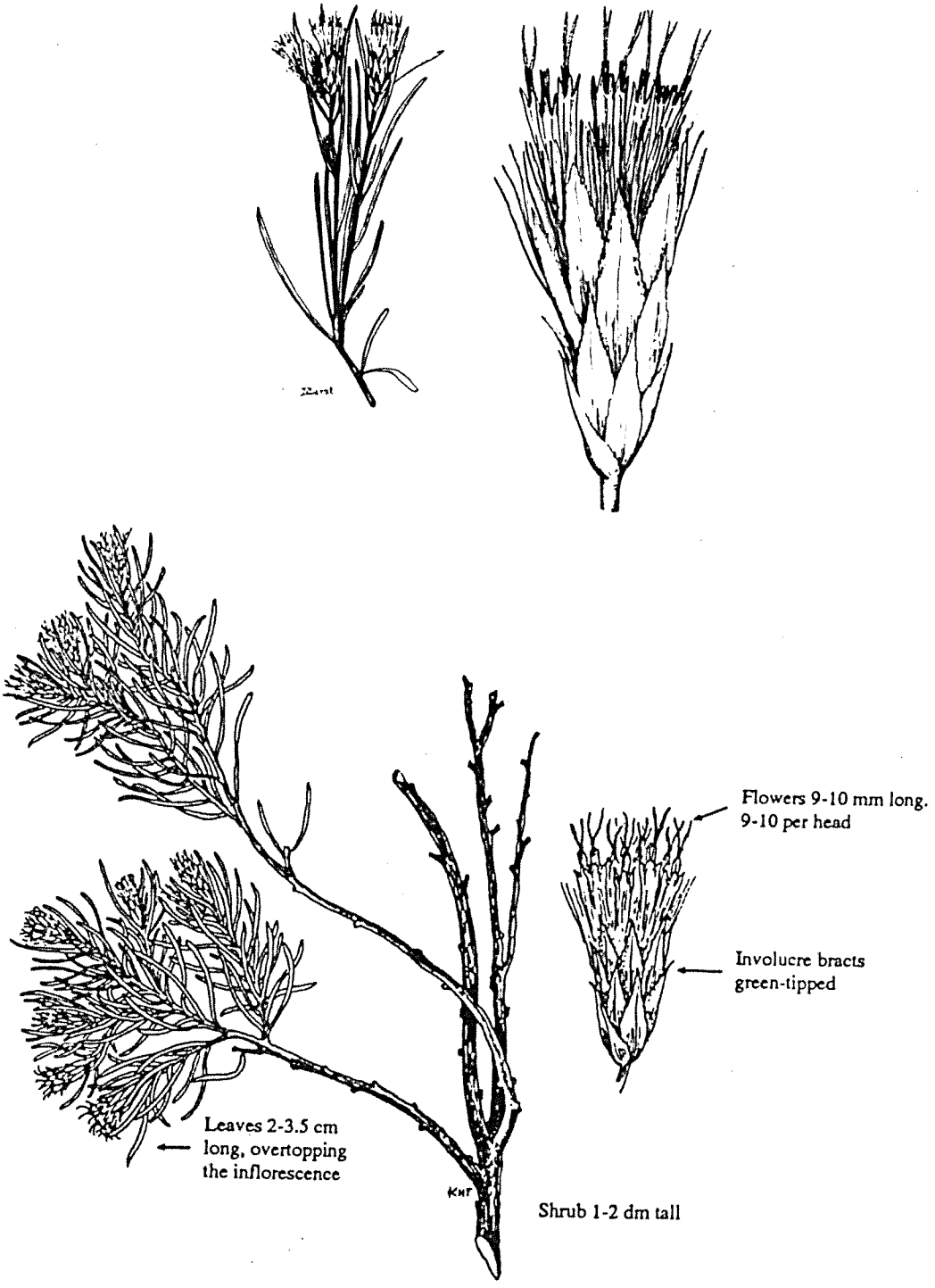
Stevens, R. 1986. Population dynamics of two sagebrush species and rubber rabbitbrush over 22 years of grazing use by three animal classes. Pages 278-285 in E. D. McArthur and B. L. Welch (eds.), Proceedings - symposium on the biology of Artemisia and Chrysothamnus. USDA Forest Service General Technical Report INT-200, Ogden, UT.

USDA Soil Conservation Service. 1981. Average annual precipitation, Montana. USDA-SCS, Bozeman, MT.

USDI Fish and Wildlife Service. 1990. Endangered and threatened wildlife and plants; review of plant taxa for listing as endangered or threatened species; notice of review. Federal Register 55: 6184-6229.

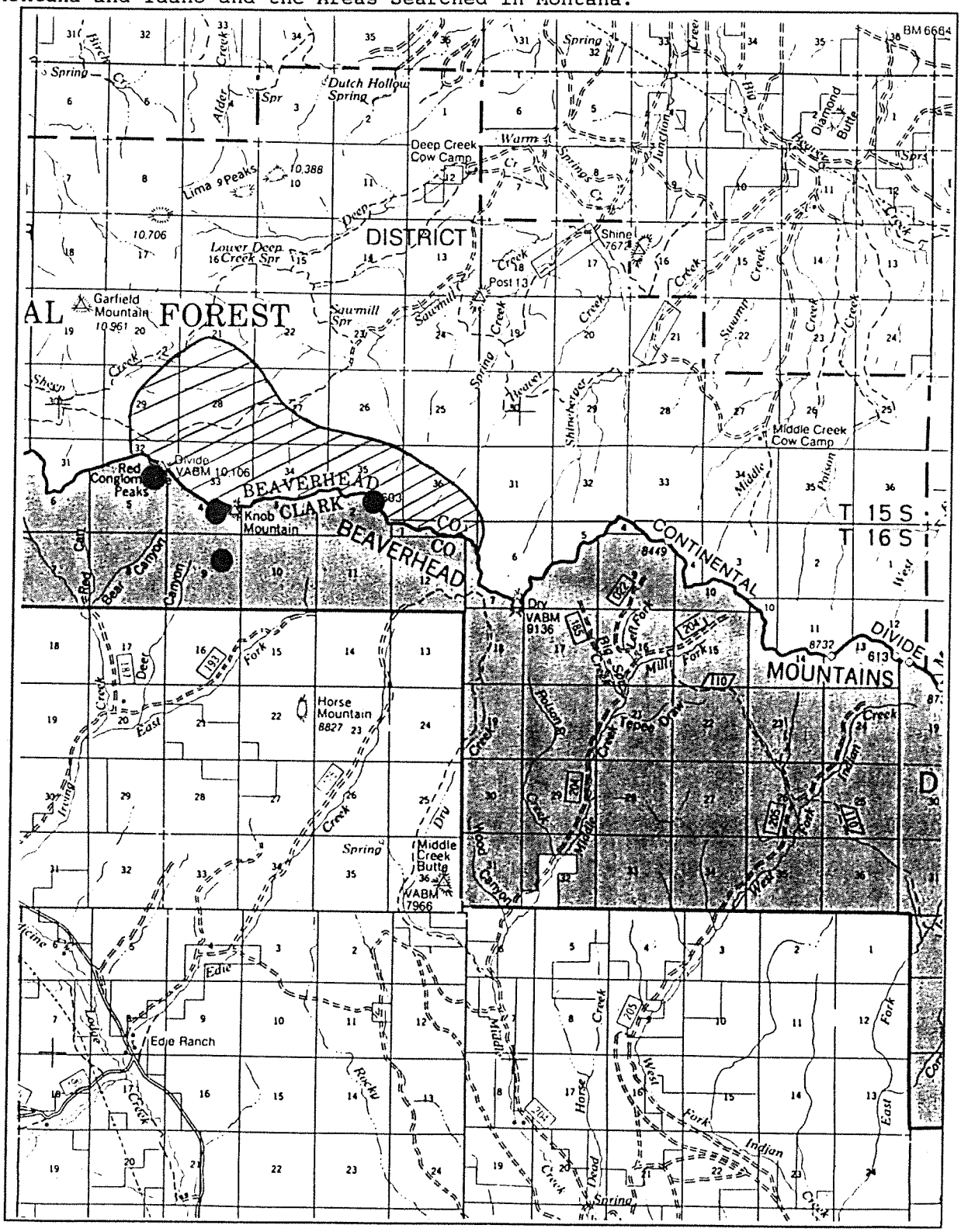
Yoakum, J. 1986. Use of Artemisia and Chrysothamnus by pronghorns. Pages 176-180 in E. D. McArthur and B. L. Welch (eds.), Proceedings - symposium on the biology of Artemisia and Chrysothamnus. USDA Forest Service General Technical Report INT-200, Ogden, UT.

Appendix A. Illustrations of Chrysothamnus parryi ssp. montanus taken from Anderson (1978) and the Region 4 sensitive plant book.

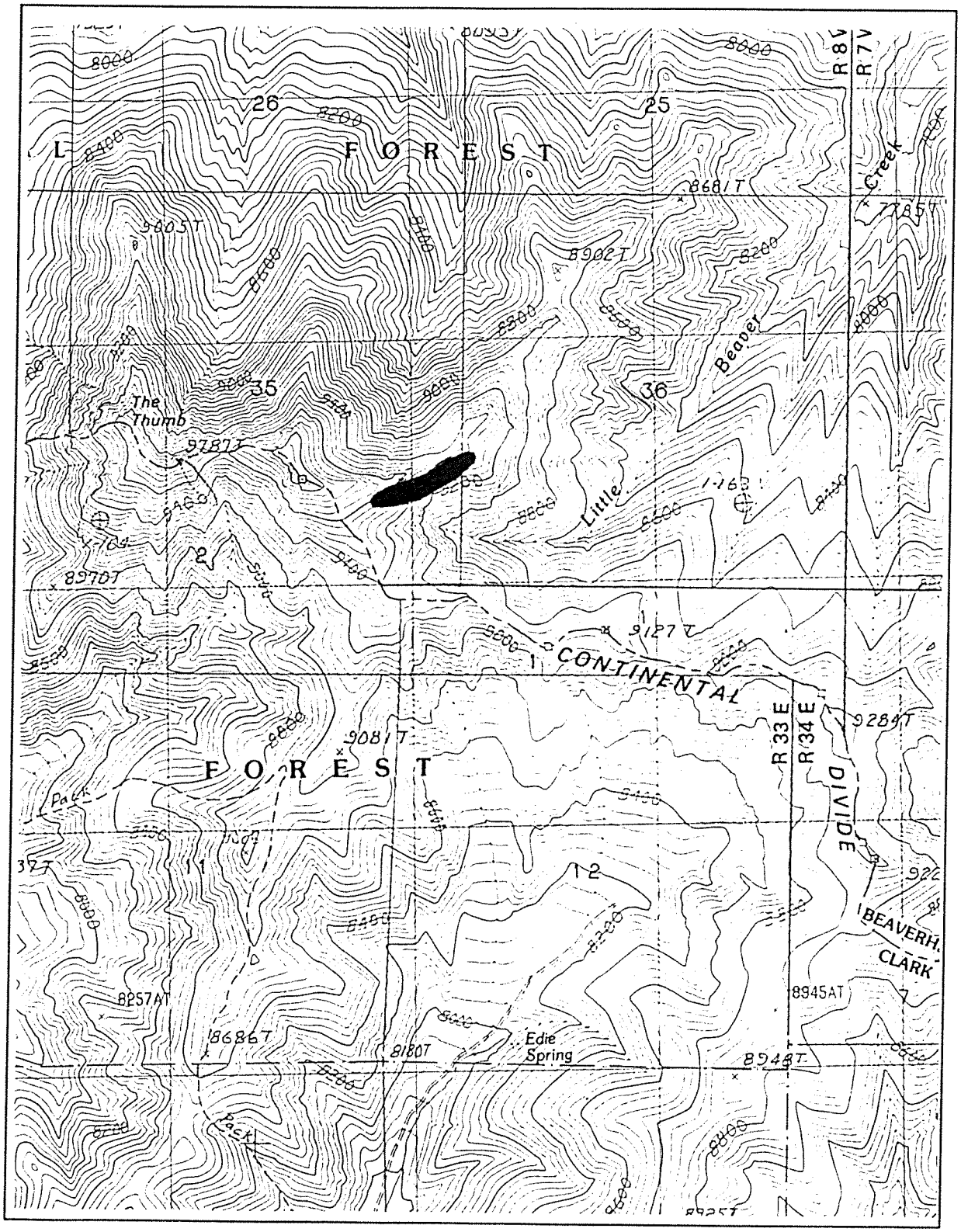


Appendix B. Photographs of Chrysothamnus parryi ssp. montanus and Its Habitat.

Appendix C. Locations of Chrysothamnus parryi ssp. montanus Populations in Montana and Idaho and the Areas Searched in Montana.



Appendix D. Location of Chrysothamnus parryi ssp. montanus Population in Montana.



Appendix E. ECODATA Vegetation Plot Data for Chrysothamnus parryi ssp. montanus Site in Montana.

COMMUNITY SURVEY FORM

MTNHP
5/27/91

GENERAL PLOT DATA

IDENTIFICATION AND LOCATION

MANUAL_____ UNITS X ft __m
PLOT NO. 92PL120 MO 08 DAY 15 YEAR 92 EOCODE_____ *___
EXAMINER(s) LESICA
PNC_____ CT_____
SITE_____ STATE MT COUNTY Beaverhead
PURP___ PREC___ QUADNAME EDIE CREEK QUADCODE 4411245
15S T/ 8W R/ 35 S/ SE 4S/ SE 4/4 COMMUNITY SIZE (acres) 20
PLOT TYPES_____ PLTRL 35.8 PLOT W_____ SURVEY_____
PHOTOS_____
DIRECTIONS -->_____

CONSERVATION RANKING

COND ___ Com: _____
VIAB ___ Com: _____
DEFN ___ Com: _____
RANK ___ Com: _____

MGMT: _____
PROT: _____

ENVIRONMENTAL FEATURES

DL 6 SOIL RPT_____
SOIL UNIT_____ SOIL TAXON_____
PM CACO LANDFORM GMRI PLOT POS SLUS SLP SHAPE CONVNF ASP 170°
SLOPE % 50 ELEVATION 9300 EROS POTENT UP EROS TYPE SL
HORIZON ANGLE (%): N___ E___ S___ W___ IFSLP_____ IFVAL_____
SPFE talus
GROUND COVER: 10 S+ 10 G+ 20 R+ T L+ 0 W+ 0 M+ 1 BV+ 0 O = 100%
DISTURBANCE HISTORY (type, intensity, frequency, season)--> ____

RIPARIAN FEATURES: Channel Width_____ Channel Entrench_____
Surface Water_____ Ht.Abv.H20_____ Dist. from H20_____

GENERAL SITE DESCRIPTION (landscape features and adjacent ct's)

OCULAR PLANT SPECIES DATA

PltIDL____

PLOT NO. _____ NO. SPECIES 31 PNC _____

TREES Tot Cv 0 MHt___
Tal Cv___ Med Cv___
Low Cv___ Grd Cv___

		CC
T 1		
T 2		
T 3		
T 4		
T 5		

SHRBS Tot Cv 1 MHt 0.5
Tal Cv___ Med Cv___
Low Cv___ Grd Cv___

		CC
S 1	Artfri	1
S 2	CHRPAR	T
S 3		
S 4		
S 5		
S 6		
S 7		
S 8		
S 9		
S10		
S11		
S12		

GRAM Tot Cv 10 MHt 0.5
Med Cv___ Low Cv___
Grd Cv___

		CC
G 1	POAINT	3
G 2	AGRSPI	1
G 3	KOECRI	T
G 4	LEUKIN	3
G 5	POASEC	T
G 6		
G 7		
G 8		
G 9		
G10		
G11		
G12		

FRBS Tot Cv 10 MHt < 0.5
Med Cv___ Low Cv___
Grd Cv___

		CC
F 1	HAPACA	1
F 2	PHIPUL	1
F 3	ERICAE	10
F 4	ERIOVA	T
F 5	DRAOLI	1
F 6	SEDLAN	T
F 7	CYMBIP	T
F 8	PENARI	1
F 9	ERICOM	T
F10	ARCOBT	T
F11	DRAINC	T
F12	TRIHAY	T
F13	OXYCAM	1
F14	BUPAME	T
F15	PHASER	T
	ARERUB	T
	ACHMIC	T
	LINPER	T
	SENCAN	T
	CASPAL	T
	TOWPAR	T
	PHLHOO	T
	PEDCON	T
	ANTUMB	3

FERN Tot Cv 0 MHt___ Med Cv___
Low Cv___ Grd Cv___

BRYO/LICH Tot Cv D

COMMENTS (EODATA) --> _____

Appendix F. Element Occurrence Records for Chrysothamnus parryi ssp. montanus in Montana.

Montana Natural Heritage Program
Element Occurrence Record

Scientific Name: CHRYSOTHAMNUS PARRYI SSP MONTANUS
Common Name: CENTENNIAL RABBITBRUSH

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Element occurrence code: PDAST2C098.001
Element occurrence type:

Survey site name: LITTLE BEAVER CREEK
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: EDIE CREEK

Township:	Range:	Section:	TRS comments:
015S	008W	35	SE4

Survey date: 1992-08-15 Elevation: 9200-9600
First observation: 1990-08-21 Slope/aspect:
Last observation: 1992-08-15 Size (acres): 5

Location:
CA. 11 MILES SOUTH OF LIMA, 3 MILES EAST OF RED CONGLOMERATE PEAKS, JUST EAST OF CONTINENTAL DIVIDE (ID-MT BORDER).

Element occurrence data:
IN MONTANA POPULATION, CA. 200 INDIVIDUALS, FLOWERING. ADDITIONAL POPULATIONS (CA. 300 INDIVIDUALS IN 1990) TO THE EAST AND SOUTHEAST IN IDAHO.

General site description:
PLANTS ON BEDROCK, TALUS AND ROCKY SITES OF RIDGE CREST AND UPPER SLOPES; BEAVERHEAD CONGLOMERATE SUBSTRATE, WITH LEUCOPOA KINGII, POA INTERIOR, ERIGERON CAESPITOSA, ANTENNARIA UMBRINELLA, AND ARTEMISIA FRIGIDA.

Land owner/manager:
BEAVERHEAD NATIONAL FOREST, DILLON RANGER DISTRICT

Comments:
REPORTED INITIALLY BY IDAHO NATURAL HERITAGE PROGRAM, IN STUDY OF IDAHO POPULATION EXTENTION INTO MONTANA.

Information source:
LESICA, P. DIVISION OF BIOLOGICAL SCIENCES, UNIV. OF MONTANA, MISSOULA, MT 59812.

Specimens:
LESICA, P. (5858). 1992. MONTU.